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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,086	10/10/2003	David Steer	77682-213 /aba	9196

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EXAMINER	
MILORD, MARCEAU	

ART UNIT	PAPER NUMBER
2618	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)
	10/682,086	STEER, DAVID ET AL
	Examiner	**Art Unit**
	Marceau Milord	2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 19 December 2006.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-33 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-3,7,8 and 12-33 is/are rejected.

7)☒ Claim(s) 4-6 and 9-11 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 7-8, 12-17, 19-26, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelbrecht et al (US Patent No 6148219) in view of Carter (US Patent No 6958677 B1).

Regarding claims 1-3, 12-14, Engelbrecht et al discloses a wireless device (figs. 2, figs. 7-8) comprising: a first antenna (2-10 of fig. 2) and a second antenna (2-20 of fig. 2; col. 2, lines 45-59;col. 5, lines 5-22); and a system for determining whether or not the wireless device is either inside a building or outside a building (col. 6, lines 31-65; col. 8, line 43- col. 9, line 34).

However, Engelbrecht et al does not specifically disclose the steps of determining whether or not the wireless device is either inside a building or outside a building.

On the other hand, Carter, from the same field of endeavor, discloses an object location monitoring system that includes beacons that are spatially distributed throughout an area to be

monitored. The beacons transmit interrogation signals that are received and echoed by transponders that attach to moveable objects. Each beacon retransmits its interrogation signal, and any transponder response thereto, to a receiver that measures a time difference between the two signals. This time difference reflects the signal propagation time, and thus the distance, between the beacon and the transponder. One such receiver analyzes the retransmitted signals of multiple beacons. A triangulation method is used to determine the location of each transponder based on the transponder's distances from a set of beacons (fig. 7; col. 1, line 44-col. 2, line 14). Furthermore, the first antenna is used to transmit interrogation signals and to receive the transponder responses. The second antenna is used for the retransmissions of the interrogation signals and transponder responses. The transponder could be integrated within a more complex electronic device. For instance, the transponder may be incorporated into a personal digital assistant unit, a pager, or a wireless patient transceiver unit used for medical telemetry (col. 4, line 46-col. 5, line 20; col. 8, line 53-col. 9, line 34). The access points are positioned throughout areas of a hospital, and the receivers are used to track the locations of patients, hospital personnel, capital equipment, and/or disposable equipment (col. 12, lines 8-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Carter to the communication system of Engelbrecht in order to monitor or track locations of wireless communication devices.

Regarding claim 7, Engelbrecht et al as modified discloses a wireless device (figs. 2, figs. 7-8) further comprising first and second radio modules to which the respective first and second antennas are coupled (col. 9, lines 9-20).

Regarding claim 8, Engelbrecht et al as modified discloses a wireless device (figs. 2, figs. 7-8) wherein the first antenna is a transit link antenna and the second antenna is an access link antenna, and the first radio module is a transit link radio and the second radio module is an access link radio (col. 8, line 43- col. 9, line 19).

Regarding claims 15-17, Engelbrecht et al discloses a method of assessing a location of a wireless device (figs. 2, figs. 7-8), the wireless device having a first antenna (2-10 of fig. 2) and a second antenna (2-20 of fig. 2), the method comprising: transmitting a test signal from the first antenna; receiving direct and/or reflected components of the test signal through the second antenna (2-20 of fig. 2; col. 2, lines 45-59;col. 5, lines 5-22); processing the direct and/or reflected components received through the second antenna to determine at least one prescribed radio signal propagation characteristic (col. 6, lines 31-65; col. 8, line 43- col. 9, line 34).

However, Engelbrecht et al does not specifically disclose the steps of determining whether or not the wireless device is either inside or outside a building based on the determination of the at least one radio signal propagation characteristic; selecting a first mode of operation upon determining that the wireless device is inside a building, and selecting a second mode of operation upon determining that the wireless device is outside a building; wherein upon failing to adequately determine whether or not the wireless device is inside or outside a building, a more restrictive one of the first and the second modes of operation is selected.

On the other hand, Carter, from the same field of endeavor, discloses an object location monitoring system that includes beacons that are spatially distributed throughout an area to be monitored. The beacons transmit interrogation signals that are received and echoed by transponders that attach to moveable objects. Each beacon retransmits its interrogation signal,

and any transponder response thereto, to a receiver that measures a time difference between the two signals. This time difference reflects the signal propagation time, and thus the distance, between the beacon and the transponder. One such receiver analyzes the retransmitted signals of multiple beacons. A triangulation method is used to determine the location of each transponder based on the transponder's distances from a set of beacons (fig. 7; col. 1, line 44-col. 2, line 14). Furthermore, the first antenna is used to transmit interrogation signals and to receive the transponder responses. The second antenna is used for the retransmissions of the interrogation signals and transponder responses. The transponder could be integrated within a more complex electronic device. For instance, the transponder may be incorporated into a personal digital assistant unit, a pager, or a wireless patient transceiver unit used for medical telemetry (col. 4, line 46-col. 5, line 20; col. 8, line 53-col. 9, line 34). The access points are positioned throughout areas of a hospital, and the receivers are used to track the locations of patients, hospital personnel, capital equipment, and/or disposable equipment (col. 12, lines 8-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Carter to the communication system of Engelbrecht in order to monitor or track locations of wireless communication devices.

Regarding claims 19-21, Engelbrecht et al discloses a method of selecting at least one radio system operation parameter for a wireless device having first (2-10 of fig. 2) and second antennas (2-20 of fig. 2; col. 2, lines 45-59;col. 5, lines 5-22), the method comprising: transmitting a test signal from the first antenna; receiving direct and/or reflected components of the test signal at the second antenna; and automatically selecting at least one radio system operation parameter for the wireless device in accordance with a radio propagation characteristic

derived from the direct and/or reflected components of the test signal received at the second antenna (col. 6, lines 31-65; col. 8, line 43- col. 9, line 34).

However, Engelbrecht et al does not specifically disclose the steps of automatically selecting at least one radio system operation parameter for the wireless device in accordance with a radio propagation characteristic derived from the direct and/or reflected components of the test signal received at the second antenna; selecting a radio system operation parameter based on a self-determination of whether or not the wireless device is located indoors or outdoors, wherein the wireless device makes use of a selected set of pre-selected radio system operation parameters.

On the other hand, Carter, from the same field of endeavor, discloses an object location monitoring system that includes beacons that are spatially distributed throughout an area to be monitored. The beacons transmit interrogation signals that are received and echoed by transponders that attach to moveable objects. Each beacon retransmits its interrogation signal, and any transponder response thereto, to a receiver that measures a time difference between the two signals. This time difference reflects the signal propagation time, and thus the distance, between the beacon and the transponder. One such receiver analyzes the retransmitted signals of multiple beacons. A triangulation method is used to determine the location of each transponder based on the transponder's distances from a set of beacons (fig. 7; col. 1, line 44-col. 2, line 14). Furthermore, the first antenna is used to transmit interrogation signals and to receive the transponder responses. The second antenna is used for the retransmissions of the interrogation signals and transponder responses. The transponder could be integrated within a more complex electronic device. For instance, the transponder may be incorporated into a personal digital

assistant unit, a pager, or a wireless patient transceiver unit used for medical telemetry (col. 4, line 46-col. 5, line 20; col. 8, line 53-col. 9, line 34). The access points are positioned throughout areas of a hospital, and the receivers are used to track the locations of patients, hospital personnel, capital equipment, and/or disposable equipment (col. 12, lines 8-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Carter to the communication system of Engelbrecht in order to monitor or track locations of wireless communication devices.

Regarding claims 22, 31-33, Engelbrecht et al discloses a method of automatically selecting a mode of operation for a wireless device (figs. 2, figs. 7-8), the wireless device having a first antenna (2-10 of fig. 2) and a second antenna (2-20 of fig. 2; col. 2, lines 45-59;col. 5, lines 5-22), and wherein a particular mode of operation is selected from a plurality of modes of operation when the wireless device is located at a corresponding particular type of location, the method a comprising: transmitting a test signal from the first antenna; receiving one or more reflections of the test signal through the second antenna; processing the one or more reflections received through the second antenna to determine at least one radio signal propagation characteristic (col. 6, lines 31-65; col. 8, line 43- col. 9, line 34).

However, Engelbrecht et al does not specifically disclose the steps of determining what type of location the wireless device is located in based on the determination of the at least one radio signal propagation characteristic; and selecting a mode of operation corresponding to the type of location that the wireless device is located in.

On the other hand, Carter, from the same field of endeavor, discloses an object location monitoring system that includes beacons that are spatially distributed throughout an area to be

monitored. The beacons transmit interrogation signals that are received and echoed by transponders that attach to moveable objects. Each beacon retransmits its interrogation signal, and any transponder response thereto, to a receiver that measures a time difference between the two signals. This time difference reflects the signal propagation time, and thus the distance, between the beacon and the transponder. One such receiver analyzes the retransmitted signals of multiple beacons. A triangulation method is used to determine the location of each transponder based on the transponder's distances from a set of beacons (fig. 7; col. 1, line 44-col. 2, line 14). Furthermore, the first antenna is used to transmit interrogation signals and to receive the transponder responses. The second antenna is used for the retransmissions of the interrogation signals and transponder responses. The transponder could be integrated within a more complex electronic device. For instance, the transponder may be incorporated into a personal digital assistant unit, a pager, or a wireless patient transceiver unit used for medical telemetry (col. 4, line 46-col. 5, line 20; col. 8, line 53-col. 9, line 34). The access points are positioned throughout areas of a hospital, and the receivers are used to track the locations of patients, hospital personnel, capital equipment, and/or disposable equipment (col. 12, lines 8-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Carter to the communication system of Engelbrecht in order to monitor or track locations of wireless communication devices.

Regarding claims 23-26, Engelbrecht et al discloses a wireless device (figs. 2, figs. 7-8) comprising: a first antenna (2-10 of fig. 2) and a second antenna (2-20 of fig. 2; col. 2, lines 45-59;col. 5, lines 5-22;col. 6, lines 31-65; col. 8, line 43- col. 9, line 34).

However, Engelbrecht et al does not specifically disclose the steps of determining status of the antenna to differentiate between at least two status criteria.

On the other hand, Carter, from the same field of endeavor, discloses an object location monitoring system that includes beacons that are spatially distributed throughout an area to be monitored. The beacons transmit interrogation signals that are received and echoed by transponders that attach to moveable objects. Each beacon retransmits its interrogation signal, and any transponder response thereto, to a receiver that measures a time difference between the two signals. This time difference reflects the signal propagation time, and thus the distance, between the beacon and the transponder. One such receiver analyzes the retransmitted signals of multiple beacons. A triangulation method is used to determine the location of each transponder based on the transponder's distances from a set of beacons (fig. 7; col. 1, line 44-col. 2, line 14). Furthermore, the first antenna is used to transmit interrogation signals and to receive the transponder responses. The second antenna is used for the retransmissions of the interrogation signals and transponder responses. The transponder could be integrated within a more complex electronic device. For instance, the transponder may be incorporated into a personal digital assistant unit, a pager, or a wireless patient transceiver unit used for medical telemetry (col. 4, line 46-col. 5, line 20; col. 8, line 53-col. 9, line 34). The access points are positioned throughout areas of a hospital, and the receivers are used to track the locations of patients, hospital personnel, capital equipment, and/or disposable equipment (col. 12, lines 8-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Carter to the communication system of Engelbrecht in order to monitor or track locations of wireless communication devices.

Claims 27-30, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelbrecht et al (US Patent No 6148219) in view of Carter (US Patent No 6958677 B1) as applied to claims 22-23 above, and further in view of Stilp et al (US Patent No 6463290 B1).

Regarding claims 27-30, Engelbrecht and Carter disclose everything claimed above, except the features of a test signal generator operable to transmit a test signal to at least one of said access or transit link radio antennas, further operable to select an appropriate one of the at least two status criteria in accordance with an assessment of predetermined criteria associated with the received test signal, wherein the test signal generator is operable to transmit the test signal from the access link antenna to the transit link antenna.

However, Stilp et al discloses a receiver module 10-2 that contains circuits to generate test frequencies and calibration signals, as well as test ports where measurements can be made by technicians during installation or troubleshooting. The extended location record includes a large number of measured parameters usefully for analyzing the instant and historical performance of the Wireless Location System. These parameters include: the RF channel used by the wireless transmitter, the antenna ports used by the Wireless Location System to demodulate the wireless transmission, the antenna ports from which the Wireless Location System requested RF data, the peak, average, and variance in power of the transmission over the interval used for location processing, the SCS 10 and antenna port chosen as the reference for location processing, the correlation value from the cross-spectra correlation between every other SCS 10 and antenna used in location processing and the reference SCS 10 and antenna, the delay value for each baseline, the multipath mitigation parameters, and the residual values remaining after the multipath mitigation calculations. Each test point is assigned a code (fig. 2L;col. 13, lines 25-50;

col. 16, lines 5-29; col. 20, lines 26-47; col. 26, lines 17-39; col. 27, lines 1-24; col. 28, lines 10-51). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Stilp to the modified system of Carter and Engelbrecht in order to minimize interference within the communications system and to maximize the potential capacity of the system.

Claim 18 contains similar limitations addressed in claim 30, and therefore is rejected under a similar rationale.

Allowable Subject Matter

3. Claims 4-6, 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments with respect to claims 1-3, 7-8, 12-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 571-272-7853. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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